Prevalence of online assessment? Causative factors

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ABSTRACT

Online assessment tools are 'advertised' with the promise that setting and marking assessment tasks can be more efficient. So why are they not prevalent at tertiary level? This paper seeks to investigate the reasons behind this from both an online author's and student's perspective.

Separate focus groups consisting of students and lecturers were used to expose the issues behind this question. Factors such as computer screen design for text placement, appropriate/inappropriate cognitive domain choice, lack/provision of online writing professional development, security, and student technophobia of the interface were issues raised by the focus groups. Information gathered from the focussed interview groups provide possible reasons for lack of acceptance and may provide solutions for online assessment acceptance.

Conclusions were that appropriate assessment tool selection and use is a function of the knowledge and skill of the lecturer. Online assessment also requires context and purpose for which the assessment tools are used. It was found that self-marking assessment tools can be useful, for the speed in which items can be checked and the results returned. These types of assessment can be used productively by students to monitor their own progress as they learn online. For assessment online, it is recommended that students be given practice sessions to ensure they are familiar with the ways of responding and submitting appropriately. This may avoid inadvertent assessment on computer competence rather than subject knowledge.

Role-play and Simulation Based Assessment tools were seen by both focus groups as excellent tools for both further learning and to assess application, analysis, synthesis and evaluation. The problem here being they are not readily available due to the fact that they are complex to create and hence are expensive.

Good practise in online assessment selection of tools and matching to cognitive domains requires further research. A questionnaire will be applied to the APNZ members offering degree programmes. The results will be further analysed to purport a framework for online assessment strategies at degree level.

Keywords

online assessment, self-marking assessments, collaborative feedback assessments, simulations.

1. INTRODUCTION

Online assessment is a new horizon. Despite the wealth of research or studies on online learning, there is a serious lack of empirical research on what constitutes good practice in learning and assessment in Australasia (Cashion, 2000; Rowlands, 2001). "New" can be coined as since the late 80s, for instance the American Psychological Association first published guidelines for the development, use and interpretation of computerised testing in 1986. The new horizon for tertiary lecturers and students to cross is acceptance of this assessment tool. The research question for this paper is: "Why is online assessment not prevalent at the tertiary level?"

The specific aim of this research is to identify the student issues and lecturer issues influencing on-line assessment at degree level and draw conclusions on strategies for acceptance of online assessment.

The following sections of the paper discuss the theoretical background, study design, and focus groups' findings.

2. THEORETICAL BACKGROUND OF THE RESEARCH

Online testing is purported to reduce testing time, gives instantaneous results, increases test security, and can be more easily scheduled and administered than paper-and-pencil tests (Gretes & Green, 2000; Bugbee, 1996).

Despite the reported benefits, online assessment is not prevalent at degree level in New Zealand tertiary institutions; this is reflected in the lack of research results found nationally. Research observations of causative factors identified such items as lack of care with the student-assessment interface (Ricketts & Wilks, 2002), student technophobia of computers, and inadequate or lack of student 'testwiseness' (Lee, March, 2001). Inappropriate cognitive domain choice (Nichols, 2003) can be surmised to be a result of inadequate or lack of staff development (Zarzewski & Steven, June, 2000) in online assessment writing.

Online assessment for the purposes of this research is defined as self-marking assessment tools, simulation-based assessment tools, collaborative and feedback-oriented tools (Nichols, 2003). This research proposes to discuss online assessment that is used to assess student learning in an online environment at tertiary level, the importance of the systems for lecturers, and the advantages and difficulties of using the method for online students.

3. THE STUDY DESIGN

The study design used a grounded theory approach (Flick, 2002) where the focussed interview groups provide context for the empirical data to be collected (Patton, 1990).

3.1 Study Design Part One

The data was collected by using separate focussed group interviews with students and with lecturers. This allowed independent identification of issues rather than confinement to discussion of the researched issues. The focus group deliberated on the on-line assessment issues in the first part of the group interview, and open-ended questions drew out personal experiences of the participants on these issues. The second half consisted of probing questions of the issues raised.

Themes to structure participants' responses to online assessment were on:

♦ Students' testwiseness (exam skills)

♦ Students' computer competency

♦ Perceived benefits and perceived disadvantages of:

♦ Online assessment administration

♦ Online assessment writing

♦ Student-assessment interface

4. LECTURER FOCUS GROUP FINDINGS

The following comments and discussion is a result of the lecturer's focus group findings.

4.1 Students' testwiseness

Lecturer's expressed definite opinions that multiple choice construction, whether paper-and-pencil or online based had limited application as the main assessment tool for their varied curriculum. They agreed assessments must offer opportunities for learning. To create assessment instruments that move beyond recall and recognition, online assessment should be framed so that, according to Marlow and Page (1998):

♦ it is a continuous process that is part of instruction

♦ it connects directly with learning and is introduced before or simultaneously with material

♦ student questions, at least in part, drive the process.

Simulation and collaborative based assessment can provide tools for this constructivist approach.

4.2 Students' computer competency

Lecturer's believed that students' test anxiety was increased because of:

♦ students' perception of lecturer's delivery/administration of online assessment

♦ lack of instructions on how to answer online questions

Student mindset also suffers from the immediacy or finality of using online technology. There is no going back.

4.3 Perceived benefits and perceived disadvantages of:

4.3.1 Online assessment administration

Online assessment controls that lecturers found effective were using supervised test conditions, locked in time frames, log in and password access, practice tests and tutorials on how to answer online questions and having a subject expert on hand to clarify questions. Lecturers doubted that mimicking classroom

exam techniques online was effective and that the technology could provide further learning and assessment experiences than self-marking tests.

The benefits included the instant response that self-marking assessment test banks of questions made in saved marking time. Some programs flagged answers that were not explicit i.e. short answers, for the lecturer to mark. In terms of reduced marking, a lecturer took 45 minutes for 80 students who'd completed multiple choice and short answer tests from a randomised test bank. Results were then automatically generated by category; short answers were flagged for the lecturer's attention.

4.3.2 Online assessment writing

"Once set up, it's a real plus - and the students come on board really fast. I offer online and paper testing for each test, and have around 99% compliance with the online option. I have 14 testbank based tests set up so far with around 250-300 students each year doing an average of 6 online tests per year, so after 3 years we're reasonably streamlined with it."
(UCOL lecturer, 2003).

This comment reflected discussion on the initial development time for self-marking assessments is soon offset by reduced assessment writing and marking time. Often this factor alone stopped lecturer acceptance of the tool.

4.3.2.1 Self-marking on-line assessment using multiple-choice, fill in the gap and short answer

Lecturers discussed that often the 'big picture' of the online assessment was not evident for the student. Design features did not allow for searching through all questions, or attempting answering them in the order of student preference, scrolling was detrimental to answering questions; no allowance was made for going back/changing student answers, self-marking options were not always provided. The comments were a result of the lack of flexibility of the online assessment programs.

4.3.2.2 Role-play, simulated interviews for collaborative assessments

Situated learning, in the form of role-play and simulations, can be a stimulus for assessment items and had been utilised via on-line discussion and bulletin boards. Lecturers discussed setting up scenarios appropriate to the subject (systems analysis), assigning roles and required students to refer to concepts and research. Participation was often in the form of asynchronous discussion. Actual assessment of online discussions were the number of times the student participates or students selecting the best examples of participation and justifying this selection.

The cost and development time of the program and planning to incorporate such tools into the course meant this tool was infrequently used.

4.3.3 Student-assessment interface

Lecturers found the programs to create self-marking assessments were rife with design errors. These included lack of online feedback of results. An example was when results were automatically generated by category, which had no feed back on actual incorrect answers. This has implications for resits if competency based assessment is used.

5. STUDENT FOCUS GROUP FINDINGS

5.1 Students' testwiseness

Students expressed definite opinions that self-marking assessments of multiple choice construction, whether paper-and-pencil or online based had limited application as the main assessment tool for their varied curriculum because, in their opinion, it tested rote learning which was not usually retained.

A common theme from students was that online assessment provided no chances to mimic pen-and-paper test techniques. Paper based allowed them to view all the questions at once, add notes as desired and study the English construction for patterns. The self-marking assessments design often frustrated their learnt exam skills mainly due to scrolling through text, and unclear response/input instructions.

5.2 Students' computer competency

These students were comfortable with the use of computer technology and had used it from school age.

6. PROVISION OF ONLINE ASSESSMENT WRITING AND DESIGN GUIDELINES

The focus group results will be further analysed to aid survey construction aimed at gathering good practise online assessment techniques.

6.1 Good Practise Checklist on Online Assessment

A good practice checklist (Rowlands, 2001) that matched the focus groups' results follows.

¨ Are online assessments authentic, based on real life applications?
¨ Are the assessment items flexible and are multiple forms of assessment possible?

¨ Are students allowed to present evidence of knowledge and skill that is meaningful to them and unique to their learning preferences?
¨ Is the assessment introduced before or simultaneously with content material?
¨ Is assessment continuous?
¨ Is self-assessment or peer assessment available?

7. STUDY DESIGN PART TWO

The foci data collected will be analysed by to develop a survey for APNZ members delivering degrees, on causative factors for online assessment acceptance by students and lecturers at degree level.

The survey will be administered in January 2004 to the APNZ members offering degree programmes. They will receive information, if requested and have provided contact details on the returned survey, about the outcome of the activity in the form of further published results.

8. CONCLUSION

Appropriate assessment tool selection and use is a function of the knowledge and skill of the lecturer and also the context and purposes for which the assessment tools are used.

8.1 Self-marking Assessment Tools

Quizzes can be useful, for the speed in which items can be checked and the results returned. These types of assessment can be used productively by students to monitor their own progress as they learn online. For self-paced learning, incorrect responses can have a built in suggestion for further learning. For assessment online, it is recommended that students be given practice sessions to ensure they are familiar with the ways of responding and submitting appropriately. This may avoid inadvertent assessment on computer competence rather than subject knowledge.

This research raised practical considerations related to assessment design guidelines that will be explored further -in the form of empirical data.

It was seen as obvious by all involved that self-marking assessments were suitable for issues requiring knowledge and comprehension not application, analysis, synthesis, and evaluation. This is supported by Nichols (2003).

8.2 Role-play and Simulation Based Assessment

These tools were seen by both focus groups as excellent tools for both further learning and to assess application, analysis, synthesis and evaluation. The problem here being they are not readily available due to the fact that they are complex to create and hence are expensive.

8.3 Causative Factors for Online Assessment Acceptance

We previously asked: "Does previous experience in sitting an online test influence the implementation of online assessment in education? Does previous experience in setting an online test influence the implementation of online assessment in education?" The answers arising from focus group discussions were that these were not the major influences for online assessment acceptance. The answer may in fact be at an institutional administrative level.

8.4 Further research implications

Good practise in online assessment selection of tools and matching to cognitive domains requires further research. This will be undertaken in 2004 the form of gathering data.

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